

## SPECIAL EDITION

# Cost Containment Tips

The DoD Pharmacoeconomic Center offers these cost-saving ideas to help MTFs deal with their tight FY04 pharmacy budgets while continuing to provide clinically effective patient care. We highlight drugs that will meet the clinical needs of most patients at significantly lower cost than other drugs in the therapeutic class. We also provide tips for purchasing drugs at lower prices. Please note that prices may vary depending on formulary status at your facility.

### Purchasing / Logistics Tips

Prescribing the most cost-effective agent is only half the battle—your facility has to buy the correct product to actually realize the savings.

[Page 4](#)

### Statins

Nearly 70% of MTF atorvastatin (Lipitor) use is with the lower strengths (10-20 mg). Equivalent LDL-lowering can be achieved with 20-40 mg of **simvastatin (Zocor)** at a much lower cost (contract prices).

- Prescribe simvastatin 20 mg instead of atorvastatin 10 mg and save 59% per dose.
- Prescribe simvastatin 40 mg instead of atorvastatin 20 mg and save 64% per dose.

[Page 5 - 7](#)

### Second-Generation Antihistamines

Use **loratadine (Claritin or generics)** instead of fexofenadine (Allegra), cetirizine (Zyrtec), or desloratadine (Clarinex) and save up to 87%. Loratadine costs from \$0.12 to \$0.38/tab compared to \$0.85/tab for Allegra, \$0.96/tab for Zyrtec, and \$0.89/tab for Clarinex.

[Page 8 - 11](#)

### Proton Pump Inhibitors

**Rabeprazole** (Aciphex) and **lansoprazole** (Prevacid) cost only \$0.65/dose—75% less than either esomeprazole (Nexium) at \$2.55/dose or the Prilosec brand of omeprazole at \$2.64/dose.

[Page 12 - 13](#)

### Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

Use **traditional NSAIDs** (e.g., ibuprofen, naproxen, diclofenac) instead of COX-2 inhibitors — celecoxib (Celebrex), rofecoxib (Vioxx), or valdecoxib (Bextra)—for patients at low risk for NSAID-related GI adverse effects. COX-2 inhibitors cost ten times more per day than traditional NSAIDs.

Consider **meloxicam (Mobic)** for patients at increased risk. Meloxicam is on the Basic Core Formulary (BCF) and the weighted average cost per day is 43% less than COX-2 inhibitors.

[Page 14 - 16](#)

### Selective Serotonin Reuptake Inhibitors (SSRIs)

**Generic fluoxetine** costs only \$0.035 per dose (contract price). Other SSRIs cost at least 25 times more.

[Page 17 - 18](#)

### **Bisphosphonates**

**Alendronate** (Fosamax) is on the Basic Core Formulary (BCF) and costs 30% less than risedronate (Actonel).

[Page 19](#)

### **Triptans**

Start new triptan patients on **zolmitriptan** (Zomig). Zolmitriptan at \$3.20 per tablet (contract price) costs at least 20% less than any other triptan. Sumatriptan (Imitrex) costs 40% more per tablet than zolmitriptan.

[Page 20](#)

### **Thiazolidinediones**

**Rosiglitazone** (Avandia) is on the BCF and costs about 20% less than pioglitazone (Actos) at equivalent doses.

[Page 21 - 22](#)

### **ACE Inhibitors vs. Angiotensin Receptor Blockers (ARBs)**

Use **ACE inhibitors** rather than ARBs for patients with hypertension, unless the patient is unable to tolerate an ACE inhibitor. ACE inhibitors are also preferred for heart failure and reduction of renal disease progression in type 2 diabetic patients due to conclusive evidence of morbidity and mortality benefits. ACE inhibitors cost \$0.11 to \$0.29/dose-about 1/3 the cost of ARBs at \$0.48 to \$0.90/dose.

[Page 23 - 24](#)

### **Calcium Channel Blockers**

Don't use amlodipine (Norvasc) or felodipine (Plendil) for uncomplicated hypertension with no other medical problems. Follow JNC VII guidelines by initiating treatment with **thiazide diuretics** or **beta blockers**. Hydrochlorothiazide (\$0.008 / 25-mg tab) and beta blockers (\$0.02-0.04/tab for atenolol and metoprolol) are much less expensive than amlodipine (\$0.81 to \$0.89/tab) or felodipine (\$0.65 to \$1.11).

[Page 25 - 27](#)

### **LHRH Agonists for Prostate Cancer**

Use the contract agent, **goserelin acetate (Zoladex)**, instead of leuprolide acetate (Lupron Depot). Zoladex costs \$90 per month-40% less than Lupron at \$147-154 per month (based on strengths used for prostate cancer).

[Page 28 - 29](#)

### **Oral Fluoroquinolones**

- Whenever clinically appropriate, use **gatifloxacin (Tequin)** instead of levofloxacin (Levaquin). Gatifloxacin 400 mg is on the BCF and costs only \$1.35, compared to \$5.06 for levofloxacin 500 mg.
- Levofloxacin 500 mg costs nearly four times more than gatifloxacin for a 10-day course of therapy (\$13.50 vs. \$50.60). The 5-day course of therapy for CAP with levofloxacin 750 mg costs almost twice as much as a 10-day course of gatifloxacin (\$13.50/10-day course)

[Page 30 - 31](#)

### **Putting the Tips to Work: Communicating with Providers**

Some commonsense suggestions about communicating cost containment information to your providers: work with your P&T committee, incorporate cost containment information into existing educational functions, and use CHCS to remind providers about preferred agents at the point of prescribing.

[Page 32](#)

### **Ted's Soapbox: Blood Glucose Test Strips & Betaseron**

The correct NDCs for ordering Precision QID & Xtra (don't pay extra!) and an incentive agreement for interferon beta-1b (Betaseron).

[Page 33](#)

**Editor's Notes:** This issue, it's all about the money. Our regular columns will return next issue.

For some additional reading material in the meantime, check out the presentations from the 2004 DoD Pharmacoeconomics and Pharmacy Benefit Conference, which are now posted on the PEC website at [www.pec.ha.osd.mil/2004\\_PEC\\_Conference/PEC\\_conference\\_2004.htm](http://www.pec.ha.osd.mil/2004_PEC_Conference/PEC_conference_2004.htm) (the link to the presentations is on the right under the title). Presentations include briefs on the DoD pharmacy benefit, the TRICARE Mail Order Pharmacy (TMOP), the new TRICARE retail pharmacy (TRRx), plus multiple presentations focusing on the conference theme—improving the effectiveness of your Pharmacy & Therapeutics Committee.

**A technical note:** if you want to download one of these Powerpoint presentations, try right-clicking on the link to the presentation and selecting "save target as..." (in Microsoft Explorer) or "save link as..." (in Netscape). This may also help if you have a slower connection—some of the files are quite large.



Also, remember that the PEC's web forum for health care providers, [RxNet](#), is open for discussions of any or all of these cost containment tips. Come browse the forum or post a question and find out what other facilities are doing.

#### Our Disclaimer

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### PEC Update Information

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#### Editor's E-mail

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#### Submitting Articles

Do you have an article you'd like to see published in the *PEC Update*? Just send Shana Trice an e-mail, or call the PEC at DSN 421-1271, Commercial (210) 295-1271. Of course, this has never actually happened. (sigh).

#### Publication Schedule

The *PEC Update* is, in theory, published 10 times per year (monthly except July and December). This may change soon as we investigate format changes. We'll keep you informed.

### Mark your Calendars...

For the 2005 DoD Pharmacoeconomics & Pharmacy Benefit Conference, 9-12 Jan 2005, San Antonio, TX. For more information, see [www.pec.ha.osd.mil/2005\\_PEC\\_Conference/PEC\\_conference\\_2005.htm](http://www.pec.ha.osd.mil/2005_PEC_Conference/PEC_conference_2005.htm)

## Purchasing / Logistics Tips

- Be careful about NDCs for **loratadine**—prices range from as low as \$0.12 per 10-mg tablet to as high as \$1.73.
- If you are willing to deal with packaging issues, the over-the-counter version of **omeprazole** (Prilosec OTC) costs only \$0.52/dose
- The contracted price for lisinopril 20 mg is \$0.11, but MTFs are paying an average of \$0.26/dose for lisinopril due to non-availability of the contract drug. **Ramipril** (Altace) is readily available at \$0.12 /dose. If you are unable to obtain lisinopril at the contract price, encourage prescribers to use ramipril instead.
- Stop buying brand name Tiazac (no longer on contract). The FSS price for the **Inwood brand of diltiazem extended release** (Forest Labs' AB-rated generic) is \$0.26 per capsule for all strengths.
- Despite the recent introduction of generics (not yet available in all strengths), **Adalat CC** remains the lowest price **nifedipine extended release** at \$0.30 for all strengths.
- **Stop buying brand name drugs when less expensive generic equivalents are available.** Although this may sometimes be necessary when a less costly generic version is unavailable, some MTFs appear to be purchasing brand name drugs with multiple generic equivalents and no known supply issues. Examples include doxycycline (\$2.17 for Vibra-Tabs vs. \$0.035 for generic doxycycline 100 mg) and enalapril (\$0.71 for Vasotec vs. \$0.05 for generic enalapril 10 mg).
- **Buy contract drugs** rather than more expensive equivalents that are not under contract. Even a small difference in the price of a commonly used agent adds up. An example is glyburide—\$0.02 at contract prices vs. \$0.07 for non-contract versions. In some cases, the price range is extreme. For example, MTFs have purchased cyclobenzaprine at up to \$2.48 per tablet—the contract price is \$0.03. Monitor contract compliance.
- **Ask your Prime Vendor for a “backorder report/substitution list”** that is faxed to you daily after your order has been transmitted. **Identify contracted NDCs that are on backorder** and substitute another contracted NDC, if one exists, or make a note to continue checking for availability. **Spot-check your shelves** routinely to see if contracted products are still being ordered. Schedule regular meetings and in-services with updates on improving or declining contract compliance.
- **Helpful Websites**
  - For the DSCP National Contract List and Incentive Agreement Chart: <http://dmmonline.dscp.dla.mil/pharm/contractlist.asp>
  - For DSCP incentive agreements: <http://dmmonline.dscp.dla.mil/pharm/incentives.asp>
  - For VA incentive agreements, many of which apply to the DoD as well: [www.vapbm.org/prices/incentives.pdf](http://www.vapbm.org/prices/incentives.pdf)
  - For national pharmaceutical contract guidance: [www.pec.ha.osd.mil/national\\_contracts.htm](http://www.pec.ha.osd.mil/national_contracts.htm)
  - For Basic Core Formulary listings: [www.pec.ha.osd.mil/ac01001.htm](http://www.pec.ha.osd.mil/ac01001.htm)
- During the 1<sup>st</sup> quarter of FY 04, MTFs bought contract drugs about 77% of the time. For the first quarter of FY 2004, cost avoidance from national pharmaceutical contracts was \$34 million out of a possible \$44 million. **If MTFs could increase contract compliance to 85%, they would save an additional \$12 million per year.**

Contact Defense Supply Center Philadelphia (DSCP) if you have difficulties obtaining contract drugs. NDC numbers and other information can be accessed on the DSCP website at <http://dmmonline.dscp.dla.mil/pharm/contractlist.asp>. A link to the DSCP page is also available on the PEC National Pharmaceutical Contracts page ([www.pec.ha.osd.mil/national\\_contracts.htm](http://www.pec.ha.osd.mil/national_contracts.htm)).

## Statins

- Based on all available projections and population models, we expect that 5-8% of patients needing statin therapy would require a statin with a greater degree of LDL reduction than simvastatin 80 mg. The statins that could be used in this situation are atorvastatin 80 mg and rosuvastatin 40 mg and possibly atorvastatin 40 mg and rosuvastatin 20 mg. The latter two examples only reduce LDL marginally more than simvastatin 80 mg, yet all of these come at a significantly higher price.
- Since our overall utilization was in line with population estimates, we didn't expect much opportunity to save costs until we examined the dose distribution. We found that nearly 70% of our atorvastatin and rosuvastatin use was with the lower strengths—atorvastatin 10 mg & 20 mg and rosuvastatin 5 mg & 10 mg—use that can clearly be covered with moderate doses of simvastatin at a much lower cost.
- There is little logical or clinical reasoning why the use of these strengths is prominent at MTFs. Likewise, there is little evidence supporting the need for dose titration for statins, in fact, the current labeling for atorvastatin now includes a 40 mg starting dose for individuals requiring significant LDL reductions, although the risk of adverse events increase for all statins as doses are raised.
- As a reminder, we have included below the contract prices and the NDCs for ordering simvastatin. Be aware that other NDCs exist for simvastatin that are NOT available at contract prices and are substantially more costly than the contracted NDCs. Please make sure you are buying simvastatin from this NDC list.
- Please note that there have not been any published trials comparing two or more statins **at equipotent dosages** showing superior clinical outcomes for any particular statin.
- Also below, we included our statin dosing equivalency chart for your reference. The chart is intended to allow clinicians to more easily select the statin dose based on the patient's requirement for LDL reduction. It is based on the average LDL reductions in published clinical trials; individual patient response will vary. An additional chart that predicts what statin dose will be required, based on LDL goal, may be found using the link below.
- For more information about the statin contract:  
[www.pec.ha.osd.mil/Contracts/Statin\\_Contract\\_Guidance.htm](http://www.pec.ha.osd.mil/Contracts/Statin_Contract_Guidance.htm)

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**PEC Points of Contact for Statins:** Dave Bretzke, RPh, Clinical Pharmacy Analyst, PEC; LtCol Barb Roach, MD, Air Force Physician Representative, PEC

**For Contract or Pricing Questions:** Contact Maureen Gallagher, DSCP Pricing Team Leader via e-mail at [paa3073@dscp.dla.mil](mailto:paa3073@dscp.dla.mil) or by phone at (215) 737-7893; or contact CDR Ted Briski ([ted.briski@amedd.army.mil](mailto:ted.briski@amedd.army.mil)) or Mr. Dave Bretzke ([david.bretzke@amedd.army.mil](mailto:david.bretzke@amedd.army.mil)) at the PEC, (210) 295-1271.

## Simvastatin (Zocor) Product Information

Strength	Dosage Form	NDC	Bottle Size	Price per Bottle	Price per Tablet
5 mg	Tablet	00006-0726-31	30	\$6.00	\$0.20
		00006-0726-54	90	\$18.00	
		00006-0726-28	100	\$20.00	
		00006-0726-82	1,000	\$200.00	
10 mg	Tablet	00006-0735-31	30	\$7.80	\$0.26
		00006-0735-54	90	\$23.40	
		00006-0735-28	100	\$26.00	
		00006-0735-82	1,000	\$260.00	
		00006-0735-87	10,000	\$2,600.00	
20 mg	Tablet	00006-0740-31	30	\$13.20	\$0.44
		00006-0740-54	90	\$39.60	
		00006-0740-28	100	\$44.00	
		00006-0740-82	1,000	\$440.00	
		00006-0740-87	10,000	\$4,400.00	
40 mg	Tablet	00006-0749-31	30	\$19.80	\$0.66
		00006-0749-54	90	\$59.40	
		00006-0749-28	100	\$66.00	
		00006-0749-82	1,000	\$660.00	
80 mg	Tablet	00006-0543-31	30	\$26.70	\$0.89
		00006-0543-54	90	\$80.10	
		00006-0543-28	100	\$89.00	
		00006-0543-82	1,000	\$890.00	

## Statin Dose Equivalency Chart

% LDL-C Reduction	HMG-CoA Reductase Inhibitor				
	Pravastatin	Fluvastatin	Lovastatin	Simvastatin	Atorvastatin
18	10 mg	20 mg	10 mg	5 mg	10 mg
19					
20					
21	20 mg	40 mg	20 mg	10 mg	
22					
23					
24					
25					
26					
27	40 mg	80 mg	40 mg	20 mg	
28					
29					
30	80 mg		80 mg	40 mg	
31					
32					
33					
34					
35					
36				40 mg	
37					
38					
39					
40				80 mg	
41					
42					
43					
44					
45					
46				40 mg	
47					
48					
49					
50				80 mg	
51					
52					
53					
54					
55					
56					
57					
58					

## 2nd Generation Antihistamines

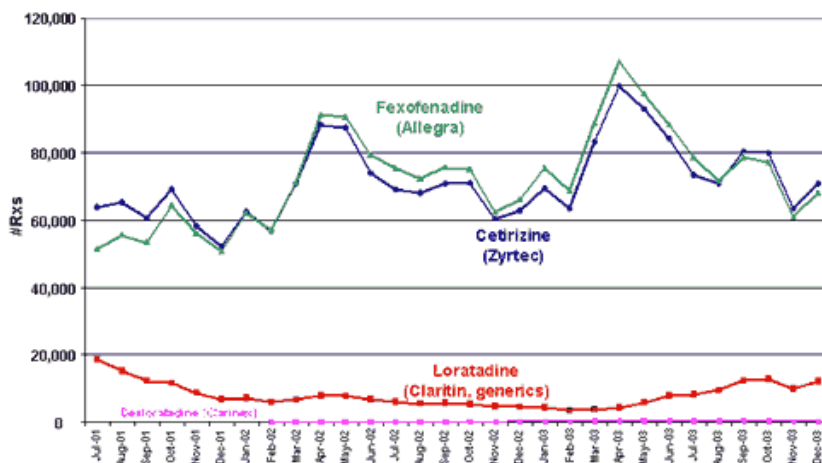
With total MTF costs approaching \$100 million annually for the 2nd generation antihistamines, this class continues to have great cost-avoidance potential for individual MTFs. Although no one 2nd generation antihistamine is effective in every case, the literature suggests that any of the available agents can effectively treat 60-70% of seasonal allergic rhinitis cases. The available agents are listed below:

Generic Name	Brand Name	Dosage Forms	Manufacturer	Cost/tab for Selected Dosage Forms
Loratadine	Claritin®, generics	10mg, D-form, liquid	Schering, generic manufacturers	\$0.38/10 mg tab (Schering) See table 2 for generic pricing
Fexofenadine	Allegra®	30, 60, 180mg, D-form	Novartis	\$0.85/180mg tab
Cetirizine	Zyrtec®	5, 10mg, liquid	Pfizer	\$0.96/10mg tab
Desloratadine	Clarinx®	10mg	Schering	\$0.89/5mg tab

Fexofenadine is currently the only 2nd generation antihistamine on the BCF. Placement on the BCF is generally intended to designate the most cost-effective drug for 1st line therapy. Because the DoD P&T Committee is unable to add any more over-the-counter (OTC) drugs to the BCF (due to Uniform Formulary requirements), it is unable to add loratadine, the most cost-effective 2nd generation antihistamine. Since the market share of fexofenadine is still substantial at MTFs, the Committee has kept it on the BCF to retain the current price.

Although cetirizine is not on the BCF, it has approximately the same market share as fexofenadine. This is the least cost-effective alternative. Loratadine currently accounts for only 5 percent of the total MTF market share. Desloratadine has virtually no MTF market share (see graph below).

### MTF Rx's for 2<sup>nd</sup> Generation Antihistamines



Source: PDTs

The potential for cost-avoidance in this class is substantial and can be tapped by any MTF that can successfully do two things: 1) shift market share of the 2nd generation antihistamines to loratadine, and 2) select low priced loratadine NDCs when ordering.

The following are the correct item numbers, UPC, NDC for the Claritin OTC product (Schering) in bottles of 500, which is listed at all the prime vendors. There has been much confusion about the correct NDC to use when ordering this product, leading to wide differences in the purchase price. Hopefully, this will solve the problem.



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Prime Vendor	Item #	Product	Package Size	Acquisition Cost	NDC/UPC
Amerisource	4654984	Claritin (Schering) OTC	500 count bottles	\$0.38/tab	UPC: 41100-0802-47 NDC: 11523-7160-8
Bergen	756217				
Cardinal	3500683				
McKesson	1641521				
Dakota	109926				

As an example, here are some of the other listings for loratadine out of the Bergen catalog. These may or may not be listed in other prime vendor catalogs. Note the wide range in costs – from \$0.12/tab to \$1.73/tab. This makes selecting the correct loratadine NDC critical to cost-avoidance efforts in this class. The best price found for generic loratadine in the Bergen catalog is \$0.12/tab for 30-count blister packs.

Product	Item #	Package Size	Acquisition Cost	NDC/UPC
AD loratadine 10mg	159273	14 count	\$1.73/tab	48433-0458-14
Alavert 24 hour	737440	15 count	\$0.26/tab	05732-0645-15
BL loratadine 10mg	787566	Unit dose 10-count	\$0.165/tab	87701-0787-56
BL loratadine 10mg	886147	Unit dose 30-counts	\$0.12/tab	87701-0886-14

The PEC strongly encourages MTFs to work closely with their prime vendors and the Defense Supply Center Philadelphia (DSCP) to identify less expensive sources of supply for generic loratadine. The PEC is exploring multiple avenues to find better prices and availability for generic loratadine—we'll let you know how it goes.

To help you estimate the potential economic benefit to your facility by using loratadine instead of Allegra, Zyrtec, or Clarinex, we have developed a cost-avoidance 'calculator' for this class of drugs (see below).

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#### Bottom-line

1. Generic loratadine costs less than other second generation antihistamines. Use it instead of Allegra, Zyrtec, or Clarinex whenever clinically appropriate.
2. **USE** the right UPC, NDC, and/or prime vendor order number to obtain generic loratadine at the lowest possible price. Work with DSCP and your prime vendor to ensure that you will be able to obtain the chosen product in the quantities you need.

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**PEC Points of Contact for 2nd Generation Antihistamines:** LtCol Dave Bennett, RPh, MHA, PhD, Air Force Pharmacist Representative, PEC; CDR Don Nichols, MD, Navy Physician Representative, PEC

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([ted.briski@amedd.army.mil](mailto:ted.briski@amedd.army.mil)) or Mr. Dave Bretzke ([david.bretzke@amedd.army.mil](mailto:david.bretzke@amedd.army.mil)) at the PEC, (210) 295-1271.

### Calculating Potential MTF Cost Avoidance—Using Loratadine Rather Than Other PPIs

The values in the cost-avoidance 'calculator' are based on system-wide averages; the situation at your MTF may be different. Assumptions include:

1. MTF market share mix of: 5% loratadine, 47.5% cetirizine, 47.5% fexofenadine (baseline – current MTF market share mix)
2. The market share shift is assumed to come equally from fexofenadine and cetirizine.
3. Current MTF average of 60 tablets/2nd generation antihistamine prescription
4. Prices of: \$0.96/tab for cetirizine, \$0.85/tab for fexofenadine, \$0.38/tab for loratadine (for loratadine prices less than \$0.38/tab, cost-avoidance values will be even greater)

To use the calculator determine the number of 2nd generation antihistamine prescriptions dispensed monthly by your facility. Find the closest corresponding number in the left hand column. Follow this row across to estimate the potential cost-avoidance associated with increasing the market share of loratadine. If you have questions about the calculator, contact LtCol Dave Bennett at [david.bennett3@amedd.army.mil](mailto:david.bennett3@amedd.army.mil)

Rxs/month	Annual MTF Base-Line Cost*	Loratadine as a Percent of Second-Generation Antihistamine Market						
		10%	20%	30%	40%	50%	60%	70%
		Annual Cost-Avoidance From Base-Line						
100	\$63,270	\$1,890	\$5,670	\$9,450	\$13,230	\$17,010	\$20,790	\$24,570
200	\$126,540	\$3,780	\$11,340	\$18,900	\$26,460	\$34,020	\$41,580	\$49,140
300	\$189,810	\$5,670	\$17,010	\$28,350	\$39,690	\$51,030	\$62,370	\$73,710
400	\$253,080	\$7,560	\$22,680	\$37,800	\$52,920	\$68,040	\$83,160	\$98,280
500	\$316,350	\$9,450	\$28,350	\$47,250	\$66,150	\$85,050	\$103,950	\$122,850
600	\$379,620	\$11,340	\$34,020	\$56,700	\$79,380	\$102,060	\$124,740	\$147,420
700	\$442,890	\$13,230	\$39,690	\$66,150	\$92,610	\$119,070	\$145,530	\$171,990
800	\$506,160	\$15,120	\$45,360	\$75,600	\$105,840	\$136,080	\$166,320	\$196,560
900	\$569,430	\$17,010	\$51,030	\$85,050	\$119,070	\$153,090	\$187,110	\$221,130
1000	\$632,700	\$18,900	\$56,700	\$94,500	\$132,300	\$170,100	\$207,900	\$245,700
1100	\$695,970	\$20,790	\$62,370	\$103,950	\$145,530	\$187,110	\$228,690	\$270,270
1200	\$759,240	\$22,680	\$68,040	\$113,400	\$158,760	\$204,120	\$249,480	\$294,840
1300	\$822,510	\$24,570	\$73,710	\$122,850	\$171,990	\$221,130	\$270,270	\$319,410
1400	\$885,780	\$26,460	\$79,380	\$132,300	\$185,220	\$238,140	\$291,060	\$343,980
1500	\$949,050	\$28,350	\$85,050	\$141,750	\$198,450	\$255,150	\$311,850	\$368,550
1600	\$1,012,320	\$30,240	\$90,720	\$151,200	\$211,680	\$272,160	\$332,640	\$393,120
1700	\$1,075,590	\$32,130	\$96,390	\$160,650	\$224,910	\$289,170	\$353,430	\$417,690
1800	\$1,138,860	\$34,020	\$102,060	\$170,100	\$238,140	\$306,180	\$374,220	\$442,260
1900	\$1,202,130	\$35,910	\$107,730	\$179,550	\$251,370	\$323,190	\$395,010	\$466,830
2000	\$1,265,400	\$37,800	\$113,400	\$189,000	\$264,600	\$340,200	\$415,800	\$491,400
2100	\$1,328,670	\$39,690	\$119,070	\$198,450	\$277,830	\$357,210	\$436,590	\$515,970
2200	\$1,391,940	\$41,580	\$124,740	\$207,900	\$291,060	\$374,220	\$457,380	\$540,540

Rxs/month	Annual MTF Base-Line Cost*	Loratadine as a Percent of Second-Generation Antihistamine Market						
		10%	20%	30%	40%	50%	60%	70%
		Annual Cost-Avoidance From Base-Line						
2300	\$1,455,210	\$43,470	\$130,410	\$217,350	\$304,290	\$391,230	\$478,170	\$565,110
2400	\$1,518,480	\$45,360	\$136,080	\$226,800	\$317,520	\$408,240	\$498,960	\$589,680
2500	\$1,581,750	\$47,250	\$141,750	\$236,250	\$330,750	\$425,250	\$519,750	\$614,250
2600	\$1,645,020	\$49,140	\$147,420	\$245,700	\$343,980	\$442,260	\$540,540	\$638,820
2700	\$1,708,290	\$51,030	\$153,090	\$255,150	\$357,210	\$459,270	\$561,330	\$663,390
2800	\$1,771,560	\$52,920	\$158,760	\$264,600	\$370,440	\$476,280	\$582,120	\$687,960
2900	\$1,834,830	\$54,810	\$164,430	\$274,050	\$383,670	\$493,290	\$602,910	\$712,530
3000	\$1,898,100	\$56,700	\$170,100	\$283,500	\$396,900	\$510,300	\$623,700	\$737,100
3100	\$1,961,370	\$58,590	\$175,770	\$292,950	\$410,130	\$527,310	\$644,490	\$761,670
3200	\$2,024,640	\$60,480	\$181,440	\$302,400	\$423,360	\$544,320	\$665,280	\$786,240
3300	\$2,087,910	\$62,370	\$187,110	\$311,850	\$436,590	\$561,330	\$686,070	\$810,810
3400	\$2,151,180	\$64,260	\$192,780	\$321,300	\$449,820	\$578,340	\$706,860	\$835,380
3500	\$2,214,450	\$66,150	\$198,450	\$330,750	\$463,050	\$595,350	\$727,650	\$859,950
3600	\$2,277,720	\$68,040	\$204,120	\$340,200	\$476,280	\$612,360	\$748,440	\$884,520
3700	\$2,340,990	\$69,930	\$209,790	\$349,650	\$489,510	\$629,370	\$769,230	\$909,090
3800	\$2,404,260	\$71,820	\$215,460	\$359,100	\$502,740	\$646,380	\$790,020	\$933,660
3900	\$2,467,530	\$73,710	\$221,130	\$368,550	\$515,970	\$663,390	\$810,810	\$958,230
4000	\$2,530,800	\$75,600	\$226,800	\$378,000	\$529,200	\$680,400	\$831,600	\$982,800
4100	\$2,594,070	\$77,490	\$232,470	\$387,450	\$542,430	\$697,410	\$852,390	\$1,007,370
4200	\$2,657,340	\$79,380	\$238,140	\$396,900	\$555,660	\$714,420	\$873,180	\$1,031,940
4300	\$2,720,610	\$81,270	\$243,810	\$406,350	\$568,890	\$731,430	\$893,970	\$1,056,510
4400	\$2,783,880	\$83,160	\$249,480	\$415,800	\$582,120	\$748,440	\$914,760	\$1,081,080
4500	\$2,847,150	\$85,050	\$255,150	\$425,250	\$595,350	\$765,450	\$935,550	\$1,105,650

## Proton Pump Inhibitors

The two proton pump inhibitors on the BCF, **rabeprazole (Aciphex)** and **lansoprazole (Prevacid)** cost only \$0.65/dose—75% less than either esomeprazole (Nexium, \$2.65/dose) or the Prilosec brand of omeprazole (\$2.64/dose). (See chart below). Prilosec OTC (omeprazole magnesium) also represents a good deal at \$0.52 - \$0.63 per tab, if you are willing to deal with packaging issues—Prilosec OTC is only available in blister packs of 14, 28 or 42 tablets. Although two generic formulations of omeprazole are available (Kremers/Schwarz and Lek), the cost—\$1.77 to \$3.04 per cap—is actually higher than the BCF agents.

Drug	Pricing Source	Price per tab/cap	Selected NDC/UPCs
Esomeprazole (Nexium) 40 mg	FSS	\$2.65	
<b>Rabeprazole (Aciphex)</b> 20 mg (BCF item)	Incentive agreement	\$0.65	62856-0243-30 (30's) 62856-0243-90 (90's)
<b>Lansoprazole (Prevacid)</b> 15 & 30 mg (BCF item)	Incentive agreement	\$0.65	NDCs beginning 00300-1541 (15 mg) and 00300-3046 (30 mg)
Pantoprazole (Protonix) 40 mg	FSS	\$1.64	
Omeprazole (Prilosec) 20 mg	FSS	\$2.64	
Omeprazole generic (Schwarz/Kremers)	FSS	\$1.77	
Omeprazole generic (Lek Pharmaceuticals)	PVP (no FSS available)	\$3.04	
Prilosec OTC	FSS	\$0.52 (42 count) \$0.56 (28 count) \$0.63 (14 count)	37000-0359-07 37000-0359-06 37000-0359-05

FSS = Federal Supply Schedule (as of Feb 2004); PVP = Prime Vendor Price (based on Bergen prime vendor; prices from other prime vendors may vary slightly)  
**Notes:** NDCs are provided for the BCF agents; UPCs (Universal Product Codes) are provided for Prilosec OTC

### A Note About Esomeprazole (Nexium)

- Esomeprazole, the S-isomer of omeprazole, is the most costly PPI. Whether it really differs in efficacy compared to omeprazole or to other PPIs is debatable.
- *Erosive esophagitis:* Two of four head-to-head trials comparing esomeprazole 40 mg with omeprazole 20 mg in erosive esophagitis showed significantly higher rates of healing with esomeprazole at Weeks 4 and 8, although healing rates were similar at Week 12. Subsequent trials have shown higher esophagitis healing rates with esomeprazole 40 mg vs. lansoprazole 30 mg (at week 8) and higher remission rates with esomeprazole 20 mg vs. lansoprazole 15 mg in patients with healed esophagitis.
- *GERD symptoms:* FDA approval of esomeprazole for GERD symptoms in patients without erosive esophagitis was based on placebo-controlled trials, not a comparison with omeprazole. One clinical trial with pantoprazole 40 mg vs. esomeprazole 40 mg has shown equal efficacy but a faster onset of action with pantoprazole in reducing gastroesophageal reflux disease (GERD) symptoms.
- Therefore, while esomeprazole 40 mg may offer some advantage in patients with erosive esophagitis, it has **NOT** demonstrated an advantage for the treatment of GERD symptoms (a larger patient population) and is clearly the least cost-effective choice for these patients.

We'll let you know about new developments in this rapidly changing class.

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### **Brief References**

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## Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)

The **main issue of concern** in the nonsteroidal anti-inflammatory class is, of course, the **"COX-2 inhibitors"**—celecoxib (Celebrex; Pfizer), rofecoxib (Vioxx; Merck), and valdecoxib (Bextra; Pfizer)—which **cost about 10 times as much as nonselective "traditional" NSAIDs**.

### Relative Costs

The following is an analysis using PDTS and DoD prime vendor data from the last quarter of FY 03 (Jul 03-Sep 03) to estimate the weighted average tabs/caps per day and the weighted average cost per day for NSAID therapy. Limitations of the analysis include inaccuracies in the days supply field entered into CHCS and transmitted to PDTS. The cost per unit purchase was obtained from prime vendor data rather than PDTS in order to more accurately reflect the average MTF cost paid for each medication.

The actual price that an MTF would pay for celecoxib, rofecoxib, or valdecoxib depends on prime vendor surcharge, market share and formulary status of the drugs at the MTF, based on incentive price agreement offered by Pfizer for celecoxib and valdecoxib and by Merck for rofecoxib. A incentive price agreement is also available for meloxicam (Boehringer Ingelheim). Please contact your manufacturer representatives, DSCP, or CDR Ted Briski or Mr. Dave Bretzke at the PEC for details of the agreements.

Generic name	Strength	Avg Cost per Unit (PV data)	Units per day Qty dispensed/ days supply (PDTS data)	Cost per Day Avg cost per unit x units per day
Celecoxib	100MG	\$0.73	1.70	\$1.24
	200MG	\$1.35	1.34	\$1.81
	400MG	\$2.49	0.97	\$2.41
		<b>\$1.22</b>	<b>1.40</b>	<b>\$1.71</b>
Rofecoxib	12.5MG	\$1.30	1.20	\$1.56
	25MG	\$1.32	1.10	\$1.44
	50MG	\$1.54	0.81	\$1.25
		<b>\$1.33</b>	<b>1.07</b>	<b>\$1.43</b>
Valdecoxib	10MG	\$1.40	1.19	\$1.66
	20MG	\$1.39	1.05	\$1.47
		<b>\$1.40</b>	<b>1.10</b>	<b>\$1.54</b>
<b>Total all COX-2s</b>		<b>\$1.28</b>	<b>1.23</b>	<b>\$1.57</b>
Meloxicam	15MG	\$0.87	0.98	\$0.85
	7.5MG	\$0.78	1.23	\$0.97
<b>Total Meloxicam</b>		<b>\$0.83</b>	<b>1.09</b>	<b>\$0.90</b>
<b>Total all traditional NSAIDs (excluding meloxicam &amp; diclofenac/misoprostol)</b>		<b>\$0.06</b>	<b>2.30</b>	<b>\$0.15</b>

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## Bottom-line

- **Use traditional NSAIDs (e.g., ibuprofen, naproxen, diclofenac) instead of COX-2 inhibitors—celecoxib (Celebrex), rofecoxib (Vioxx), or valdecoxib (Bextra)—for patients at low risk for NSAID-related GI adverse effects.**
  - **Consider meloxicam (Mobic) in lieu of COX-2 inhibitors for patients at increased risk.**
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## Clinical Considerations

- Compared to nonselective NSAIDs such as ibuprofen, naproxen, and diclofenac, **the question is not efficacy (which appears similar), but safety.** The most well-publicized safety issue is, of course, the potential for reduced incidence of complicated upper gastrointestinal events (e.g., GI bleed) and symptomatic ulcers with COX-2 selective NSAIDs vs. nonselective NSAIDs. Unfortunately, **evidence from the two major trials** (the VIGOR trial with rofecoxib and the CLASS trial with celecoxib) **is complicated** by issues related to the patient populations studied (RA patients in VIGOR vs. OA/RA patients in CLASS); use of concomitant medications (no aspirin in VIGOR vs. 22% aspirin use in CLASS); and controversy over methodological issues (including data analysis and presentation of GI safety results in the CLASS trial and presentation of cardiovascular event data in VIGOR).
- **Extrapolation of trial results to the general population is further complicated** by differences in background GI risk among patients (known risk factors include age, prior GI events, high dosage of NSAIDs, and concurrent use of medications known to increase GI risk); use of other drugs known to decrease GI risk (e.g., proton pump inhibitors, misoprostol); the relative COX-2 selectivity of the comparator NSAID (both COX-2 selectivity and risk of a GI event differ among NSAIDs), and the chronicity of therapy (clearly, the longer patients receive NSAIDs, the greater the cumulative risk of a GI event). Most studies assessing the GI risk of nonselective NSAIDs have been performed in older populations, which are at higher risk.
- Most pharmacoeconomic analyses of the "COX-2 inhibitors" have concluded that while there are likely to be some subsets of high risk patients in whom their use is cost-effective, **use of COX-2 inhibitors to treat low-risk patients (e.g., young patients with no known GI risk factors) and short-term use of COX-2 inhibitors (especially in low-risk patients) are unlikely to be cost-effective.** The question of where to draw the line between high-risk and low-risk patients is not resolved. Two different approaches are the VA criteria for non-formulary use, which are based on evaluation of an individual patient's risk for GI events based on their "GI Score" (available at [www.vapbm.org](http://www.vapbm.org)) and the more liberal criteria used by DoD mail order plan over the last few years (available on the PEC website).
- **Less serious GI adverse effects of NSAIDs (e.g., dyspepsia) may be less common with COX-2 inhibitors than with the nonselective NSAIDs used in the clinical trials, but the relative incidence and the cost implications are not well-defined.** The suggestion that use of COX-2 selective agents may decrease concomitant use of PPIs—and the inclusion of this as a cost factor in pharmacoeconomic studies—is problematic. Not only is it potentially difficult to determine if the PPI was initiated as a gastroprotective agent or to treat GERD or other GI symptoms, it may be impossible to determine if symptoms prompting initiation of the PPI were associated with NSAID use or an unrelated problem. In addition, patients may not be willing to make the experiment of discontinuing the PPI, regardless of clinical rationale.
- **Other safety issues include** renal adverse effects (renal toxicity, effects on GFR or creatinine clearance), which appear similar to nonselective NSAIDs; effects on blood pressure and edema (more frequent with rofecoxib vs. celecoxib; consistent with known NSAID effects); and an increased incidence of cardiovascular events. The latter was reported during the VIGOR trial (50 mg rofecoxib vs. naproxen). **Both the suggestion that rofecoxib may increase cardiovascular risk and the possibility that celecoxib and/or valdecoxib may also increase cardiovascular risk relative to nonselective NSAIDs remain controversial.**



- One proposed mechanism for the increase in cardiovascular risk links it to selective inhibition of COX-2 but not COX-1, resulting in COX-1 mediated production of thromboxane A2 (which promotes vasoconstriction, platelet activation and aggregation) unopposed by COX-2 mediated production of inflammatory site prostaglandins and prostacyclin (a vasodilator and inhibitor of platelet aggregation). This mechanism could clearly have implications for any agent with a high COX-2/COX-1 selectivity ratio. Analysis of existing data is complicated by a suggested cardioprotective effect of naproxen (due to effects on COX-1), differences in the percentage of patients receiving concomitant aspirin, and the underlying cardiovascular risk of patients included in the trials.
- **Alternatives to COX-2 inhibitors** in patients at increased risk for NSAID-associated GI adverse events include: other NSAIDs shown to be relatively selective for COX-2 (e.g., etodolac, meloxicam); salsalate; nonselective NSAID + misoprostol; nonselective NSAID + PPI; acetaminophen (OA patients).
- The DoD P&T Committee opted not to select a COX-2 inhibitor for the BCF in May 2002 (due to cost considerations weighing the likelihood of increased inappropriate use vs. incentive purchase agreement prices offered by the manufacturers). **Meloxicam was added to the BCF in August 2002** to provide a BCF agent for patients at increased risk of NSAID-associated GI events and to facilitate MTF efforts to establish step therapy programs including meloxicam.
- **Meloxicam** has been shown to be relatively COX-2 selective compared to "traditional" NSAIDs (e.g., diclofenac, piroxicam, ibuprofen, naproxen), although COX-2 selectivity appears dose-related, with greater COX-2 selectivity at a daily dose of 7.5 mg than at 15 mg. It is considered to be a "COX-2 inhibitor" in Europe. Evidence that meloxicam reduces the incidence of GI events compared to traditional NSAIDs rests primarily on analysis of pooled data from meloxicam clinical trials involving up to 117,755 patients. More details are available from minutes of the Aug 2002 DoD P&T Executive Council meeting. No head-to-head trials of sufficient size and duration to discern a clinically significant difference in complicated upper GI events are available, so it is not possible to accurately compare the incidence rate of complicated upper GI events with meloxicam vs. celecoxib, rofecoxib, or valdecoxib.

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## Selective Serotonin Reuptake Inhibitors (SSRIs)

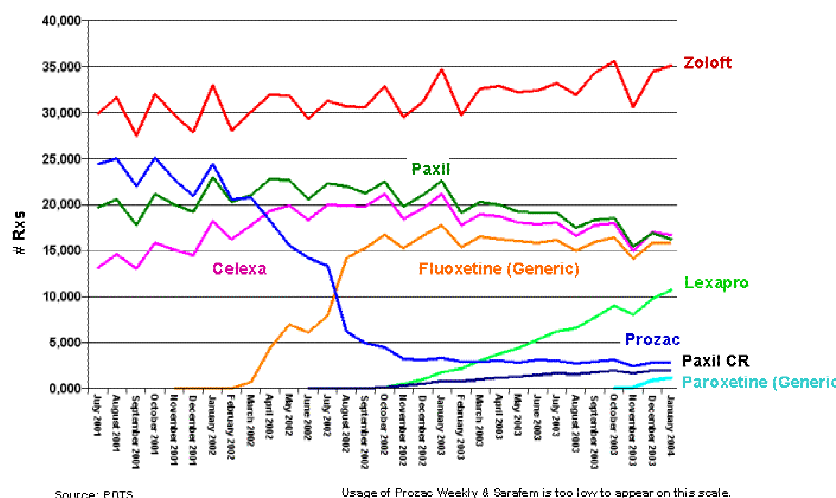
- Currently, there are four SSRIs on the BCF: citalopram (Celexa), fluoxetine (Prozac), paroxetine (Paxil), and sertraline (Zoloft). The BCF listings do not include Sarafem (repackaging of fluoxetine 20 mg for Premenstrual Dysphoric Disorder), Prozac Weekly (90-mg formulation of fluoxetine), or controlled release paroxetine (Paxil CR). The other two SSRIs, fluvoxamine (generics only) and escitalopram (Lexapro, the S-isomer of citalopram), are not on the BCF. Of the BCF agents, generics are available for fluoxetine and paroxetine (although prices are still high for paroxetine).
- Generic citalopram is expected to become available in 2005, generic sertraline in 2006 (as usual, dates are uncertain pending the outcome of litigation.)
- Comparative prices (FSS or contract prices as of 1 March 2004) are shown in the chart below. Prices at your MTF may vary based on prime vendor surcharges or local agreements.

Generic Name	Brand Name	Strength	Description	Package Size	Manufacturer	NDC	Cost per Tab/cap
Citalopram	Celexa	10 mg	Tab		Forest		\$1.33
		20 mg					\$1.24
		40 mg					\$1.24
Escitalopram	Lexapro	10 mg	Tab		Forest		\$1.00
		20 mg					\$1.00
Fluoxetine	Fluoxetine (contract generic)	10 mg	Cap	100 500	Mallinckrodt	00406066101 00406066105	\$0.026
		20 mg	Cap	100 500 30		00406066301 00406066305 00406066303	\$0.033 \$0.032 \$0.051
				100, UD		00406066362	\$0.097
	Prozac	10 mg	Tab		Lilly		\$1.78
		20 mg	Cap				\$1.33
	Prozac Weekly	90 mg	Cap		Lilly		\$3.56 \$11.03
Paroxetine	Paroxetine (generic)	10 mg	Tab	30	Par	49884087611	\$1.78
			Tab	100	Major	00904567661	\$1.83
		20 mg	Tab	30	Par	49884087711	\$0.60
			Tab	100	Par	49884087701	\$0.83
			Tab	100, UD	Major	00904567761	\$1.70
		30 mg	Tab	30	Par	49884087811	\$0.86
		40 mg	Tab	30	Par	49884087911	\$0.91
	Paxil	10 mg	Tab		GSK		\$1.33
		20 mg					\$1.33
		30 mg					\$1.33
		40 mg					\$1.51
	Paxil CR	12.5 mg	Tab		GSK		\$1.63
		25 mg					\$1.69
		37.5 mg					\$1.76
Sertraline	Zoloft	25 mg	Tab		Pfizer		\$1.42
		50 mg					\$1.40
		100 mg					\$1.42

### Notes

- Includes tablets & capsules only.
- Prices are for 100-count bottles, if available. Other package sizes may have different unit prices
- A more complete listing of NDCs with Federal Supply Schedule (FSS) prices is supplied for generic paroxetine.. MTFs may have access to other generic versions of paroxetine through their prime vendors.
- The listing for generic fluoxetine is for the contract generic only.

- The following graph shows MTF utilization of SSRIs, shown here by brand name. Use of generic fluoxetine is showing a slight downwards trend rather than an upwards trend, with the major increase in use in the SSRI class for escitalopram (Lexapro), the S-isomer of citalopram.



We've covered SSRIs in the PEC Update twice before, in [January 2001](#) and again in [August 2002](#). The identity of the most cost-effective drug has changed since 2001, but the message has not:

- SSRIs (citalopram, fluoxetine, paroxetine, and sertraline) appear to be similar in efficacy, effectiveness, and overall tolerability (as assessed by study discontinuation rates, dropouts due to adverse events, and rates of switching to other antidepressants). SSRIs do not appear to differ in overall tolerability, but the incidences of specific adverse effects (e.g., sedation or activation) vary. The half-life of SSRIs also differs, as does their relative propensity to cause cytochrome P450 drug interactions.
- Unless the patient has had a previous successful trial, it is difficult to predict which patients will respond to any given SSRI.
- The issue is not switching SSRI therapy in patients who are currently receiving successful treatment with another SSRI, which is likely to be problematic and possibly counterproductive. It is the selection of an agent to be used for newly diagnosed patients, or patients requiring a change in therapy due to adverse effects or lack of efficacy.
- In the absence of individual patient factors favoring the selection or avoidance of a particular SSRI, there is an equal chance that treatment with any particular SSRI will be successful. Therefore, the selection of a SSRI to be used for newly diagnosed patients essentially depends on the relative cost of the agents.
- Impending generic availability of products should be taken into account when making formulary decisions.

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### Bottom-line

In the absence of a reason to prefer a specific SSRI, use the most cost-effective choice, fluoxetine.

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## Bisphosphonates

- At the August 2003 DoD P&T Committee Executive Council meeting, the DoD accepted an incentive agreement to keep alendronate (Fosamax) on the BCF and forgo a joint DoD/VA national closed class solicitation. The details of this incentive agreement are not public, but the agreement significantly reduces the price of alendronate at MTFs and the TMOP.
- The clinical documents supporting a sole BCF agent can be found on pages 4-6 (and an appendix) of the November 2002 DoD P&T Committee Executive Council meeting minutes (click [here](#) to download the minutes, in pdf format).
- It is sufficient to say that **we feel that there is no compelling reason to have a second bisphosphonate on your local formulary**. But for those who choose to add risedronate (Actonel) to your local formulary, Proctor & Gamble/Aventis has a local incentive agreement available. Details about each of these incentive agreements can be obtained from your local Merck, Proctor & Gamble, or Aventis representative.

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## Triptans

- In June of 2003, a contract was awarded to AstraZeneca for zolmitriptan (Zomig), as the sole oral triptan on the Basic Core Formulary, to be used as the first line oral triptan for patients not yet taking an oral triptan. The contract allows MTFs the option to add one additional oral triptan to their local formulary, used for treating patients who fail zolmitriptan, but no more. Prescriptions for other oral triptans must be handled using your local non-formulary procedures. The provision to allow a second formulary oral triptan was included in the contract based on the following:
  - Only 60-70% of a population will respond to any specific triptan
  - A majority of patients who fail the first triptan will respond to a trial of a second triptan
  - Persons failing a trial on two different triptans will rarely respond to a trial of a third triptan
- For more information about the triptan contract, please see the PEC National Contracts page: [www.pec.ha.osd.mil/national\\_contracts.htm](http://www.pec.ha.osd.mil/national_contracts.htm).
- The basis for selecting a second triptan on your formulary is determined locally. Things to consider include clinical attributes compared to zolmitriptan, cost, provider preference, and local usage trends.
- The neurology consultants for each service support the results of this contracting initiative.
- In February 2004, the DoD P&T Committee Executive Council reviewed the results of a retrospective database study evaluating whether MTF patients received zolmitriptan as their first oral triptan. In December 2003, only 31% of new oral triptan patients received zolmitriptan. There was a wide range of compliance between facilities. We are making significant progress, but we still need to do better. Complying with the contract by starting new triptan patients on zolmitriptan will save your facility money.
- Other companies marketing oral triptans are competing heavily for the second position on your formulary. GSK has lowered their regular price for sumatriptan to everyone and Merck is offering a significant price reduction to those facilities who select rizatriptan (Maxalt) as their second formulary triptan. Other incentive agreements may exist as well. Please contact your local manufacturer representative for details or contact DSCP. Incentive agreements are listed on the DSCP website is: <http://dmmonline.dscp.dla.mil/pharm/incentives.asp>.
- For your information, GSK has reformulated sumatriptan and issued new NDC numbers for these products. The table below outlines the new NDC numbers and the price you should be paying for sumatriptan (not taking in account any PV surcharges). If you have difficulty purchasing these NDCs or have improper pricing, please contact DSCP. GSK has stated that they will issue Prime Vendor credits to those sites who are overcharged during this transition.

Drug/Strength	NDC	Price per box of 9 tablets
Imitrex 25 mg tabs	00173-0735-00	\$40.70
Imitrex 50 mg tabs	00173-0736-01	
Imitrex 100 mg tabs	00173-0737-01	

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### Bottom-line

Start new triptan patients on zolmitriptan (Zomig). Zolmitriptan at \$3.20 per tablet (contract price) costs at least 20% less than any other triptan. Sumatriptan (Imitrex) costs 40% more per tablet than zolmitriptan.

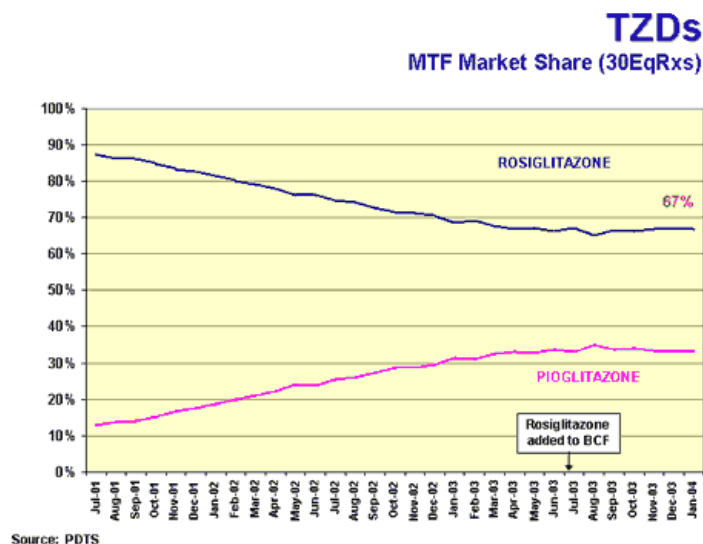
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**PEC Point of Contact for Triptans:** LtCol Dave Bennett, RPh, MHA, PhD, Air Force Pharmacist Representative, PEC; CDR Don Nichols, MD; MC USN; Navy Physician Representative, PEC

**For Contract or Pricing Questions:** Contact Maureen Gallagher, DSCP Pricing Team Leader via e-mail at [paa3073@dscp.dla.mil](mailto:paa3073@dscp.dla.mil) or by phone at (215) 737-7893; or contact CDR Ted Briski ([ted.briski@amedd.army.mil](mailto:ted.briski@amedd.army.mil)) or Mr. Dave Bretzke ([david.bretzke@amedd.army.mil](mailto:david.bretzke@amedd.army.mil)) at the PEC, (210) 295-1271.

## Thiazolidinediones (TZDs)

- The primary clinical difference between rosiglitazone and pioglitazone relates to changes in lipid profiles – rosiglitazone may adversely affect lipid levels more so than pioglitazone. No randomized, controlled, head-to-head trials have been published that directly compare TZD effects on lipid levels as a primary outcome; available evidence comes from measurement of lipids performed as part of clinical efficacy studies with these agents. No morbidity/mortality studies are available. Diabetes itself is a risk factor for cardiovascular disease, thus the true clinical impact of a difference between the lipid effects of rosiglitazone and pioglitazone has yet to be determined.
- A table containing lipid results from TZD clinical trials and further discussion regarding the TZDs are available in the August 2002 DoD P&T Executive Council minutes (click [here](#) to download the minutes in pdf format).
- It is important to remember that metformin and the sulfonylureas still remain the first line choices for treating type 2 diabetics. TZDs are reserved for second or third line use in combination with the either sulfonylureas or metformin; neither rosiglitazone nor pioglitazone are indicated for triple therapy (TZD + metformin + sulfonylurea). Both TZDs are also indicated for use with insulin; both carry warnings for fluid retention when used with insulin. Patients with New York Heart Association (NYHA) class III/IV heart failure should not receive TZDs, due to the risk of fluid retention and symptom exacerbation.
- **Rosiglitazone is expected to meet the clinical needs of at least 90% of MTF patients.** Consider pioglitazone in a diabetic patient who has experienced adverse lipid changes with rosiglitazone, or in other special situations where the lipid profile is of utmost concern.
- Rosiglitazone (Avandia) is on the BCF, with discounted pricing based on market share under a national incentive agreement. When equivalent doses are considered, rosiglitazone costs about 20% less than pioglitazone (Actos). The higher the market share, the lower the cost of rosiglitazone. The current market basket for the TZD class shows rosiglitazone has 67% of MTF TZD prescriptions. You might see a local incentive agreement for pioglitazone, which requires local MTF formulary addition.
- If you need details regarding the incentive agreements and what the effective price for these products would be at your MTF, please contact DSCP or CDR Ted Briski or Mr. Dave Bretzke at the PEC (1-210-295-1271).
- The following graph shows the change in percent utilization of the TZDs ("market share") associated with addition of rosiglitazone to the BCF in July 2003. [Rosiglitazone/metformin (Avandamet) was also added to the BCF in July 2003; click [here](#) for meeting minutes in pdf format]



32

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**PEC Points of Contact for TZDs:** Angela Allerman, Pharm.D, Clinical Pharmacy Specialist, PEC; LtCol Barb Roach, MD; MC, USAF; Air Force Physician Representative, PEC

**For Contract or Pricing Questions:** Contact Maureen Gallagher, DSCP Pricing Team Leader via e-mail at [paa3073@dscp.dla.mil](mailto:paa3073@dscp.dla.mil) or by phone at (215) 737-7893; or contact CDR Ted Briski ([ted.briski@amedd.army.mil](mailto:ted.briski@amedd.army.mil)) or Mr. Dave Bretzke ([david.bretzke@amedd.army.mil](mailto:david.bretzke@amedd.army.mil)) at the PEC, (210) 295-1271.

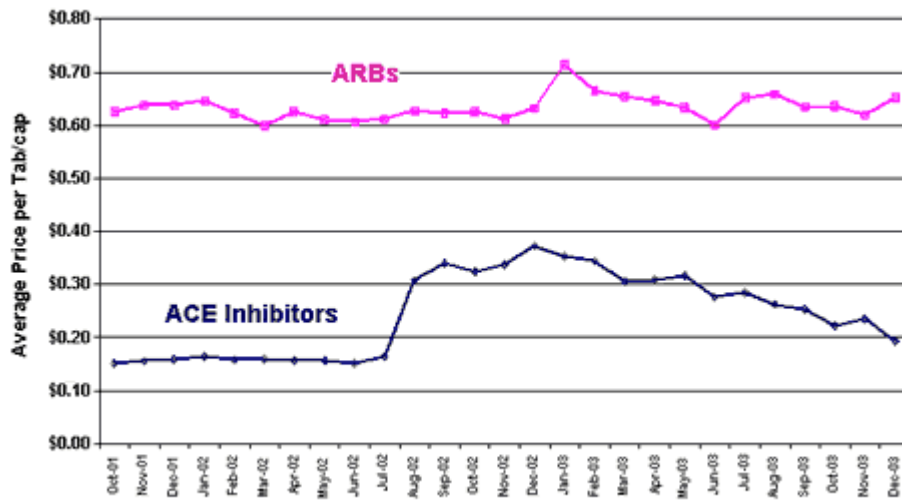
## ACE Inhibitors vs. Angiotensin Receptor Blockers

- Angiotensin Converting Enzyme (ACE) inhibitors and Angiotensin Receptor Blockers (ARBs) show similar efficacy for hypertension. Because of the cost differential—ACE inhibitors are available for as low as \$0.11 per tab/cap, compared to \$0.48 to \$0.90 for ARBs—ACE inhibitors should be used for patients with hypertension unless the patient is unable to tolerate an ACE inhibitor.
- ACE inhibitors have proven mortality benefits in several conditions (e.g., heart failure post-myocardial infarction, congestive heart failure). Long term morbidity and mortality benefits with ARBs are still under investigation. It is likely premature to conclude that all ARBs will share the same clinical benefits ("class effect"), based on the different results reported in individual ARB trials (e.g., ValHeFT vs. CHARM; VALIANT vs. OPTIMAAL). Clinical experience and cost still support the use of ACE inhibitors instead of ARBs, particularly for chronic heart failure and in high risk patients post MI.
- Patients experiencing cough with one individual ACE inhibitor can sometimes find relief when switched to another ACE inhibitor, rather than starting an ARB. Use caution with patients who have experienced angioedema with an ACE inhibitor, since they can also experience angioedema with an ARB. So when would you use an ARB? When patients can't tolerate ACE inhibitors.
- Ensure that other causes of cough (e.g. upper respiratory infection) are ruled out before a patient is labeled as having an ACE cough. One VA study found success when switching patients from one ACE to another when cough occurred, before starting an ARB (Petropoulos 2002).
- The issue of when to use dual therapy with both an ACE inhibitor and an ARB (for CHF or diabetic renal disease) is not resolved.
- Although lisinopril is the most commonly used ACE in DoD, **ramipril** (Altace) is also a good choice due to its well-established morbidity and mortality benefits (HOPE trial), BCF status, and low price (\$0.12 for all doses). **Lisinopril** is available under a mandatory source contract at prices ranging from \$0.04-\$0.18/tab, depending on strength, but supply issues have been problematic. The average price paid by MTFs for lisinopril is \$0.26 per tab/cap (please see the chart and graph below for comparisons).

**Weighted average cost per tab/cap  
for Lisinopril & Ramipril vs. ARBs**

<b>Lisinopril</b>	<b>\$0.26</b>
<b>Ramipril</b>	<b>\$0.12</b>
Candesartan	\$0.82
Eprosartan	\$0.77
Losartan	\$0.65
Valsartan	\$0.63
Irbesartan	\$0.59
Telmisartan	\$0.48
Olmesartan	\$0.48

### ARB vs ACE average cost per unit, MTFs, based on prime vendor data



Source: Prime Vendor Data

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### Bottom-line

Use ACE inhibitors rather than ARBs for patients with hypertension, unless the patient is unable to tolerate an ACE inhibitor. ACE inhibitors are also preferred for heart failure and reduction of renal disease progression in type 2 diabetic patients due to conclusive evidence of morbidity and mortality benefits.

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**PEC Points of Contact for ACE inhibitors and ARBs:** Angela Allerman, Pharm.D, Clinical Pharmacy Specialist, PEC; LtCol Barb Roach, MD; MC, USAF; Air Force Physician Representative, PEC

**For Contract or Pricing Questions:** Contact Maureen Gallagher, DSCP Pricing Team Leader via e-mail at [paa3073@dscp.dla.mil](mailto:paa3073@dscp.dla.mil) or by phone at (215) 737-7893; or contact CDR Ted Briski ([ted.briski@amedd.army.mil](mailto:ted.briski@amedd.army.mil)) or Mr. Dave Bretzke ([david.bretzke@amedd.army.mil](mailto:david.bretzke@amedd.army.mil)) at the PEC, (210) 295-1271.

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### Brief References

Mann D, Deswal A. Angiotensin-receptor blockade in acute myocardial infarction – a matter of dose. N Engl J Med 2003;349 (20): 1963-65.

Petropoulos JB. Success of a P&T policy for use of a second ACE inhibitor before switching to an ARB. Formulary 2002;37:97-98, 101.



## Calcium Channel Blockers

Calcium channel blockers (CCBs) represent the seventh most expensive drug class in DoD as measured by prime vendor purchases, with \$45 million in annual expenditures in FY 2003. Of the three types of CCBs—diltiazem, verapamil, and the dihydropyridines—the dihydropyridine CCBs account for 81.4% of the dollar expenditures in the class.

### Diltiazem

There has recently been a significant development in the extended release diltiazem group. The DoD/VA contract for Tiazac expired in December 2003 and was not renewed due to generic availability. However, Inwood (a subsidiary of Forest Labs) is offering an A-B rated generic to Tiazac at \$0.26 per capsule. **This price is even lower than the price offered for Tiazac under the original contract.** The table below shows NDC numbers, strengths and prices.

#### Extended Release Diltiazem (Inwood) Available at Reduced Prices

NDC Number	Item Description	Strength	FSS Price/tablet
00258-3687-90	Diltiazem HCL 120 mg Cap, SA	120 mg	\$0.26
00258-3688-90	Diltiazem HCL 180 mg Cap, SA	180 mg	
00258-3689-90	Diltiazem HCL 240 mg Cap, SA	240 mg	
00258-3690-90	Diltiazem HCL 300 mg Cap, SA	300 mg	
00258-3691-90	Diltiazem HCL 360 mg Cap, SA	360 mg	

### Verapamil

There is a Joint DoD/VA sole source contract for verapamil extended release tablets. At \$0.07 per tablet for most strengths, **the IVAX generic is the most cost effective generic verapamil extended release that DoD MTFs can purchase.**

#### Extended Release Verapamil (IVAX) Available at Contract Prices

NDC Number	Item Description	Strength	FSS Price/capsule
00172-4285-60	Verapamil 120 mg Tab, SA 100's	120 mg	\$0.15
00172-4286-60	Verapamil 180 mg Tab, SA 100's	180 mg	\$0.07
00172-4286-70	Verapamil 180 mg Tab, SA 500's	180 mg	\$0.07
00172-4280-60	Verapamil 240 mg Tab, SA 100's	240 mg	\$0.07
00172-4280-70	Verapamil 240 mg Tab, SA 500's	240 mg	\$0.07

### Dihydropyridines

Drugs in this class include nifedipine (Procardia, Procardia XL, Adalat, Adalat CC), amlodipine (Norvasc), felodipine (Plendil), isradipine (Dynacirc, Dynacirc CR), nisoldipine (Sular), nimodipine (Nimotop), bepridil (Vascor), and nicardipine (Cardene, Cardene SR). With the exception of nimodipine, all are indicated for hypertension, angina, or both, with the long acting forms (extended release or long half-life) being the more clinically useful agents. Nimodipine is unique among these agents in that its sole indication is for patients with subarachnoid hemorrhage; it is not included in the table below.

The table below compares the long acting DHP calcium blockers by price and indication.

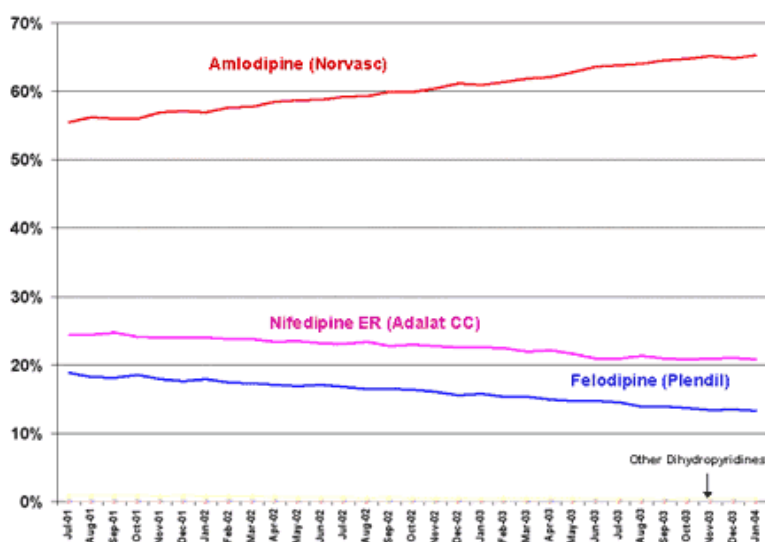
### Long-Acting Dihydropyridine Calcium Channel Blockers

Brand Name	FDA Indications	Generic	Strengths	Best DoD Price
Adalat CC	Hypertension Angina (effort and vasospastic)	Nifedipine extended release	30 mg 60 mg 90 mg	\$0.30
Procardia XL (Mylan generic)	Hypertension Angina (effort and vasospastic)	Nifedipine extended release	30 mg 60 mg 90 mg	\$0.265 \$0.445 \$0.641
Procardia XL	Hypertension Angina (effort and vasospastic)	Nifedipine extended release	30 mg 60 mg 90 mg	\$0.864 \$1.493 \$1.773
Norvasc	Hypertension Angina (stable and unstable)	Amlodipine	2.5 mg 5 mg 10 mg	\$0.84 \$0.817 \$0.894
Plendil	Hypertension	Felodipine	2.5 mg 5 mg 10 mg	\$0.646 \$0.659 \$1.111
Dynacirc CR	Hypertension	Isradipine extended release	5 mg 10 mg	\$0.46 \$0.46
Sular	Hypertension	Nisoldipine extended release	10 mg 20 mg 30 mg	\$0.735 \$0.713 \$0.713

Source: DoD/VA FSS Prices, 1 Feb 2004

The market share of amlodipine in DoD MTFs is currently 65% and rising. At approximately 2.8 times the price of Adalat CC, this represents missed opportunity for cost containment. Given that the FDA recently issued a stay of their approval for generic amlodipine maleate, it appears unlikely that the generic form will be available soon. Thus **the best opportunity for cost containment under current conditions is for MTFs to encourage the use of Adalat CC in hypertensive patients requiring a dihydropyridine calcium channel blocker**—keeping in mind the fact that most hypertensive patients do not require calcium channel blockers as initial therapy.

### MTF Market Share of Dihydropyridine Calcium Channel Blockers



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### Bottom-line

For the most cost-effective treatment of hypertension, follow JNC VII guidelines by initiating treatment with **thiazide diuretics** or **beta blockers** in patients with uncomplicated hypertension and no other medical problems. Initiate treatment with other antihypertensive drug classes (e.g., angiotensin converting enzyme inhibitors, angiotensin receptor blockers, or calcium channel blockers) only if there are compelling indications for their use.

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**PEC Points of Contact for CCBs:** Eugene Moore, Pharm.D, Clinical Pharmacy Specialist, PEC; LtCol Barb Roach, MD; MC, USAF; Air Force Physician Representative, PEC

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## LHRH Agonists

Among other uses, Leutinizing Hormone Releasing Hormone (LHRH) agonists are indicated for the palliative treatment of advanced prostate cancer. The DoD currently has a contract in place that significantly lowers the price of goserelin acetate (Zoladex), as compared to other LHRH agonists, such as leuprolide acetate (Lupron Depot), for dosage forms indicated for prostate cancer. MTFs may not add other LHRH agonists to their formulary for the treatment of prostate cancer. MTFs may make additional LHRH agonists available within their facility for the treatment of conditions other than prostate cancer, based on the scope of medical practice provided within the facility.

For more information about the LHRH agonist contract, please consult contract guidance on the PEC National Contracts page ([www.pec.ha.osd.mil/national\\_contracts.htm](http://www.pec.ha.osd.mil/national_contracts.htm)).

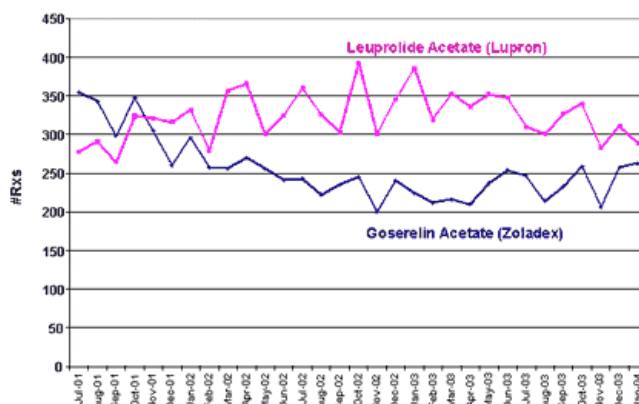
The costs of LHRH agonists indicated for the treatment of prostate cancer are presented in the table below.

**Prices of LHRH Agonist Products for Prostate Cancer**

Agent	Description	NDC	Price
Zoladex (goserelin acetate)	3.6 mg, 1 mo	00310-0960-36	\$90.00
	10.8 mg, 3 mo	00310-0961-30	\$270.00
	3.6 mg, 1 mo	00310-0950-36	\$90.00
	10.8 mg 3 mo	00310-0951-30	\$270.00
Lupron Depot (leuprolide acetate)	7.5 mg, 1 mo	00300-3642-01	\$154.95
	22.5 mg, 3 mo	00300-3346-01	\$464.85
	30 mg, 4 mo	00300-3683-01	\$549.19
Eligard (leuprolide acetate)	7.5 mg, 1 mo	00024-0793-75	\$110.55
	22.5 mg, 3 mo	00024-0222-05	\$331.65
	30 mg, 4 mo	00024-0610-30	\$442.20
Trelstar LA & Trelstar Depot (triptorelin)	3.75 mg, 1 mo	00009-7664-01	\$109.14
	11.25 mg, 3 mo	00009-5215-01	\$366.04

On average, close to 550 LHRH prescriptions for prostate cancer are dispensed monthly by MTFs. Of these, more than 50 percent are for the higher priced leuprolide acetate (Lupron). Considerable cost-avoidance could be realized in this class if market share was shifted from Lupron to Zoladex. Monthly usage of both agents is presented below.

**MTF LHRH Rx's**  
**Male Patients Only, Jul 01 – Jan 04**



Source: PDTS

The table below demonstrates the potential annual cost-avoidance to MTFs if market-share is shifted from leuprolide to goserelin. This is based on the mixture of dosage forms that were used in the last six months. (Aug 03 to Jan 04)

Percent goserelin Market Share	Annual Cost of LHRH Therapy	Annual Cost-Avoidance Potential
44% (Current)	\$3,112,084	
50%	\$2,984,751	\$127,333
60%	\$2,772,528	\$339,556
70%	\$2,560,305	\$551,779
80%	\$2,348,082	\$764,002
90%	\$2,135,859	\$976,225

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#### Bottom-line

Considerable cost-avoidance could be realized in this class if MTFs shifted market share of LHRH agonists used for the treatment of prostate cancer from Lupron to Zoladex.

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**PEC Points of Contact for LHRH Agonists:** LtCol Dave Bennett, RPh, MHA, PhD, Air Force Pharmacist Representative, PEC; LtCol Barb Roach, Air Force Physician Representative, PEC

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## Oral Fluoroquinolones

With the huge price increase for levofloxacin, MTFs must act quickly to switch utilization to gatifloxacin, or the potential cost savings for the first year of the gatifloxacin contract will be significantly eroded. MTFs will incur increased costs in this drug class if they take no action and utilization patterns do not change.

The oral fluoroquinolone contract is a joint DoD/VA open class contract awarded to oral gatifloxacin (Tequin). As a result of the contract, gatifloxacin was added to the Basic Core Formulary as a “workhorse” fluoroquinolone for the indications of community acquired pneumonia (CAP) and acute sinusitis. All strengths of oral gatifloxacin tablets must be on formulary at all MTFs. This drug class will remain “open” on the BCF, which means that MTFs are permitted to add additional products within the drug class to their MTF formularies.

**The contract price applies to both MTF and TMOP for all strengths at \$1.35 per tablet.** See contract guidance for specific NDCs (available on the PEC National Contracts page ([www.pec.ha.osd.mil/national\\_contracts.htm](http://www.pec.ha.osd.mil/national_contracts.htm)).

### Economic Impact of the Contract in DoD

The \$1.35 price for gatifloxacin is 33% less than the \$2.01 per tablet that MTFs had been paying for levofloxacin prior to 31, 2003. The price of levofloxacin 500 mg increased to the FSS price of \$5.06 per tablet on 31 January 2004. Table 3 shows the range of potential cost savings that can result from using gatifloxacin instead of levofloxacin.

Potential Cost Savings with Gatifloxacin Contract				
Drug (Oral formulations only)	Cost/day	Cost savings/day with gatifloxacin	Cost/ course of therapy	Cost savings/course of therapy with gatifloxacin
Levofloxacin 750 mg	\$4.59/day	\$3.24	\$22.95/5 day course (CAP)	\$9.45
Levofloxacin 500 mg	\$5.06/day	\$3.71	\$50.60/ 10 day course (sinusitis)	\$37.10
<b>Gatifloxacin 200 and 400 mg</b>	<b>\$1.35/day</b>	<b>NA</b>	<b>\$13.50/ 10 day course (CAP &amp; sinusitis)</b>	<b>NA</b>
<b>Potential MTF Savings:</b> If an MTF dispensed 10,000 doses of levofloxacin 500 mg annually, using gatifloxacin instead of levofloxacin would yield a cost savings of \$37,100.				
<b>Potential DoD Savings:</b> DoD MTFs dispensed 3.1 Million doses of levofloxacin and gatifloxacin in FY03. If MTFs used only gatifloxacin, the cost savings would be approximately \$2.1 million based on 2003 prices, or as much as \$11.5 million based on projected prices for 2004.				

### Treatment Guidance

The selection of gatifloxacin as a “workhorse” fluoroquinolone for sinusitis or CAP does not mean that the DoD P&T Executive Council advocates indiscriminate use of gatifloxacin for all cases of sinusitis and CAP. Gatifloxacin should be used only when clinically appropriate.

Diabetic patients receiving oral hypoglycemic agents or insulin and a fluoroquinolone appear to be at increased risk for dysglycemic events, although these events are rare. Dysglycemic events have been reported with all fluoroquinolones. They have been reported more frequently with gatifloxacin, however the true difference in incidence is unknown. In the diabetic population all fluoroquinolones should be used with caution.

**Update of Practice Guidelines for the Management of Community-Acquired Pneumonia in Immunocompetent Adults** from the Infectious Disease Society of America (IDSA), 2003

- Recommend use of erythromycin, azithromycin, clarithromycin, and doxycycline as initial antibiotic treatment in patients with no recent antibiotic use and no comorbidities.
- In patients recently treated with other antibiotics or with comorbidities a fluoroquinolone (gatifloxacin, levofloxacin, or moxifloxacin) may be appropriate.

**Principles of Appropriate Antibiotic Use for Acute Sinusitis in Adults** from the American College of Physicians-American Society of Internal Medicine (CDC position paper, March 2001)

- Most cases of acute rhinosinusitis in ambulatory care are caused by uncomplicated viral upper respiratory tract infections and do not require antibiotic treatment.
- Patients with symptoms less than 7 days are unlikely to have a bacterial infection.
- Acute bacterial rhinosinusitis resolves without antibiotic treatment in most cases.
- Initial antibiotic treatment should be with narrow-spectrum antibiotics as first-line agents (on the basis of clinical trials, amoxicillin, doxycycline, and trimethoprim-sulfamethoxazole are favored), therefore broader spectrum antibiotics, like the fluoroquinolones, should be reserved for second-line therapy.

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**Bottom-line**

- The DoD P&T Executive Council held an interim meeting by email on 8 January 2004 and voted to remove levofloxacin from the Basic Core Formulary.
- The price increase of levofloxacin price to \$5.06 per 500 mg tablet, the PEC strongly recommends that MTFs remove levofloxacin from their formularies.
- Levofloxacin should only be used in cases of medical necessity when a more cost effective fluoroquinolone will not meet patients' clinical needs.
- MTF fluoroquinolone expenditures have risen steadily in recent years. Due to the large price increase of levofloxacin, MTFs must act quickly to maximize the cost saving potential of the gatifloxacin contract. Gatifloxacin became available at the contract price of \$1.35 per tablet on 1 January 2004.
- **With the levofloxacin price increase to \$5.06 (for the 500-mg tablet), MTFs will need to move at least 83% of their new fluoroquinolone prescriptions to gatifloxacin by 30 April 04 to "break even" for calendar year 04.**

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**PEC Points of Contact for Oral Fluoroquinolones:** CDR Denise Graham, PharmD, USN, Clinical Operations Director, PEC; LtCol Barb Roach, MD. Air Force Physician Representative, PEC

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## Putting the Tips to Work

### Communicating with Providers

- Provide cost containment information to your local Pharmacy & Therapeutics (P & T) Committee to reduce costs without adversely affecting patient care.
- Work with your P&T Committee to use existing or develop specific provider mail groups targeting providers with information on cost containment issues pertinent to their specialties.
- Promote cost containment initiatives at multi-disciplinary functions, such as P&T Committee meetings, Commander's Call, or Grand Rounds.
- Implement "Cost Containment Topics" in the residency lecture series under the auspices of Practice Management. Follow-up during teaching rounds and while precepting in clinic to encourage fiscally responsible prescribing habits.
- Review brief cost containment ideas at morning report and noon conferences to encourage development of cost-effective prescribing practices. Ideally, these sessions would be routinely scheduled and provide feedback to participants.
- Focus on high use/high expenditure pharmaceuticals, but balance anticipated clinical benefit vs. cost. The most costly drug may be the most cost-effective.
- Consider using the CHCS comment field to demonstrate cost comparisons, not merely to give the prices for individual drugs. For example: CHCS should state "**consider Loratadine as first line therapy @ \$0.38/day.**"
  - To generate a prompt in the comment field outlining a specific cost containment tip, you may need to contact your local CHCS representative or pharmacy personnel.
  - The new CHCS II will be able to communicate DoD-wide messages in the CHCS order entry program. Hopefully in the future when ordering a specific drug, we will be able to type in the class first (e.g., proton pump inhibitors), and let CHCS display various PPIs and the corresponding prices to better view cost differences.
- Adapt cost containment tips for PDA use.
- Suggest that providers include patients in weighing cost vs. benefit. (Editor's Note: Per Drs. Nichols & Roach, who say this works if you do it right.)

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**CDR Don Nichols, MD, Navy Physician Representative, PEC**  
**LtCol Barb Roach, MD, Air Force Physician Representative, PEC**  
**Capt Jill Dacus, MD, Army Physician Representative, PEC**  
**Elizabeth Hearin, PharmD, Clinical Pharmacist, PEC**



## Ted's Soapbox: Blood Glucose Test Strips & Betaseron

### Using the Correct NDCs for Precision Strips

DoD has an incentive agreement with Abbott-MediSense for Precision meters and strips. At this time, most MTFs have already switched to the Precision Xtra meter in lieu of the QID meter, but use of both strips is still occurring. Unfortunately there are many different packages and NDC numbers for both these products, which can create confusion when MTFs order from their prime vendor. The following NDCs are the ones that must be used to get the government price, which is less than half the commercial product pricing.

Please make sure you are ordering the correct NDCs and getting the best MTF prices. Any questions can be directed to me at [Ted.Briski@amedd.army.mil](mailto:Ted.Briski@amedd.army.mil)

The QID and Xtra strips are not interchangeable. Separate NDCs exist for both the QID and Xtra strips. All the proper NDCs appear on the Amerisource/Bergen web catalog with the correct prices loaded. I do not have direct access to the other prime vendor web catalogues. Hope this helps.

Precision Strip	Package size	NDC	Package Price	Bergen Item Number
QID	100 strips	57599-8336-01	\$31.87	251173
QID	50 strips	57599-8335-01	\$16.18	252833
Xtra	100 strips	5799-9694-05	\$31.87	460547
Xtra	50 strips	57599-9695-04	\$16.18	460530

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### Interferon beta-1b (Betaseron)

For those facilities using interferon beta-1b, Berlex Laboratories has established an incentive agreement permitting enrolled MTFs to earn prime vendor credited rebates on Betaseron purchases. The agreement is associated with FSS contract V797P-5271X and runs indefinitely. The product covered under the agreement is Betaseron 0.3 mg, NDC 50419-523-15, 1 box of 15 vials. Berlex's point of contact to enroll into this agreement is Andy Beechley at 704- 583-0894 or voice mail at 888-237-5394 ext. 7620#. A copy of the agreement can be obtained by e-mailing me at [Ted.Briski@amedd.army.mil](mailto:Ted.Briski@amedd.army.mil).

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**For Contract or Pricing Questions:** Contact Maureen Gallagher, DSCP Pricing Team Leader via e-mail at [paa3073@dscp.dla.mil](mailto:paa3073@dscp.dla.mil) or by phone at (215) 737-7893; or contact CDR Ted Briski ([ted.briski@amedd.army.mil](mailto:ted.briski@amedd.army.mil)) or Mr. Dave Bretzke ([david.bretzke@amedd.army.mil](mailto:david.bretzke@amedd.army.mil)) at the PEC, (210) 295-1271.